SEQUENCE LISTING

<110> Currie, Mark G.
Mahajan-Miklos, Shalina

<120> METHODS AND COMPOSITIONS FOR THE
TREATMENT OF GASTROINTESTINAL DISORDERS

<130> 14184-039001

<140> US 10/766,735
<141> 2004-01-28

<150> US 60/443,098
<151> 2003-01-28

<150> US 60/471,288
<151> 2003-05-15

<150> US 60/519,460
<151> 2003-11-12

<160> 124

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1 5 10 15
Gly Cys Tyr

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Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Ala Gly
1 5 10 15
Cys Tyr

<210> 3
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<213> Escherichia coli

<400> 3

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Cys Asn


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<213> Citrobacter freundii

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Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Ala Gly
 1               5                  10                  15
Cys Tyr


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Gln Ala Cys Asp Pro Pro Ser Pro Pro Ala Glu Val Ser Ser Asp Trp
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            20                  25                  30

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<213> Yersinia enterocolitica

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Lys Ala Cys Asp Thr Gln Thr Pro Ser Pro Ser Glu Glu Asn Asp Asp
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Trp Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
            20                  25                  30

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<213> Yersinia enterocolitica

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Gln Glu Thr Ala Ser Gly Gln Val Gly Asp Val Ser Ser Ser Thr Ile
 1               5                  10                  15
Ala Thr Glu Val Ser Glu Ala Glu Cys Gly Thr Gln Ser Ala Thr Thr
            20                  25                  30
Gln Gly Glu Asn Asp Trp Asp Trp Cys Cys Glu Leu Cys Cys Asn Pro
        35                  40                  45
Ala Cys Phe Gly Cys
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<213> Yersinia kristensenii
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Ser Asp Trp Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
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<210> 9
<211> 17
<212> PRT
<213> Vibrio cholerae

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Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
1 5 10 15
Asn

<210> 10
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<213> Vibrio mimicus

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Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
1 5 10 15
Asn

<210> 11
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Cys Tyr

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Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe
1 5 10

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<400> 13
Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly
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<210> 14

<211> 17
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Asn

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<213> Vibrio mimicus

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Ile Asp Arg Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
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Asn

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<213> Yersinia enterocolitica

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Asp Trp Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
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Asp Trp Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
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 1               5                  10                  15
Cys

<210> 19
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Trp Asp Trp Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Phe Gly Cys

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<400> 20

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Ser Phe Ser Gln Ser Thr Glu Ser Leu Asp Ser Ser Lys Glu Lys Ile
            20                  25                  30
Thr Leu Glu Thr Lys Lys Cys Asp Val Val Lys Asn Asn Ser Glu Lys
        35                  40                  45
Lys Ser Glu Asn Met Asn Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys
    50                  55                  60
Asn Pro Ala Cys Ala Gly Cys Tyr
65                  70
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<400> 21

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Pro Phe Ala Gln Asp Ala Lys Pro Val Glu Ser Ser Lys Glu Lys Ile
            20                  25                  30
Thr Leu Glu Ser Lys Lys Cys Asn Ile Ala Lys Lys Ser Asn Lys Ser
        35                  40                  45
Gly Pro Glu Ser Met Asn Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys
    50                  55                  60
Asn Pro Ala Cys Thr Gly Cys Tyr
65                  70
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<400> 22

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Ala Phe Gly Gln Glu Thr Val Ser Gly Gln Phe Ser Asp Ala Leu Ser
            20                  25                  30
Thr Pro Ile Thr Ala Glu Val Tyr Lys Gln Ala Cys Asp Pro Pro Leu
        35                  40                  45
Pro Pro Ala Glu Val Ser Ser Asp Trp Asp Cys Cys Asp Val Cys Cys
    50                  55                  60
Asn Pro Ala Cys Ala Gly Cys
65                  70
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<220>
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<400> 23
Met Lys Lys Ser Ile Leu Phe Ile Phe Leu Ser Val Leu Ser Phe Ser
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            20                  25                  30
Thr Leu Glu Ser Lys Lys Cys Asn Ile Ala Lys Lys Ser Asn Lys Ser
        35                  40                  45
Gly Pro Glu Ser Met Asn
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<210> 24
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<400> 24
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Pro Phe Ala Gln Asp Ala Lys Pro Ala Gly Ser Ser Lys Glu Lys Ile
            20                  25                  30
Thr Leu Glu Ser Lys Lys Cys Asn Ile Val Lys Lys Ser Asn Lys Ser
        35                  40                  45
Gly Pro Glu Ser Met
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<210> 25
<211> 53
<212> PRT
<213> Escherichia coli

<400> 25
Met Lys Lys Ser Ile Leu Phe Ile Phe Leu Ser Val Leu Ser Phe Ser
 1               5                  10                  15
Pro Phe Ala Gln Asp Ala Lys Pro Ala Gly Ser Ser Lys Glu Lys Ile
            20                  25                  30
Thr Leu Glu Ser Lys Lys Cys Asn Ile Val Lys Lys Asn Asn Glu Ser
        35                  40                  45
Ser Pro Glu Ser Met
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<210> 26
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<212> PRT
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<400> 26

Asn Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

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<211> 19
<212> PRT
<213> Artificial Sequence

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<400> 27
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1 5 10 15
Gly Cys Tyr

<210> 28
<211> 19
<212> PRT
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<400> 28
Asn Ser Ser Asn Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 29
<211> 14
<212> PRT
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<400> 29
Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 30
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<400> 30
Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Trp Gly Cys Tyr
1 5 10

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Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

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<400> 35

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1 5 10 15

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<210> 38
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1 5 10 15
Gly Cys Tyr Asp Phe
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 1               5                  10                  15
Gly Cys Tyr Asp Phe
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 1               5                  10                  15
Gly Cys Tyr Asp Phe
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Gly Cys Tyr Asp Phe
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Gly Cys Tyr Asp Phe
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Cys Cys Glu Phe Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr Asp Phe

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<210> 53
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Phe

<210> 54
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1 5 10 15
Phe

<210> 55
<211> 17
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1 5 10 15
Phe

<210> 56
<211> 17
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1 5 10 15
Phe

<210> 57
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Phe

<210> 58
<211> 17
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 1               5                  10                  15
Phe

<210> 59
<211> 17
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<220>
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<400> 59
Asn Cys Cys Glu Lys Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr Asp
 1               5                  10                  15
Phe

<210> 60
<211> 42
<212> DNA
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<210> 61
<211> 46
<212> DNA
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<220>
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cacacctcga gttaggtctc catgctttca ggaccacttt tattac 46

<210> 62

<211> 69
<212> DNA
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attaataac 69

<210> 63
<211> 69
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ctactattc 69

<210> 64
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
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attaataac 69

<210> 65
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
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ctactattc 69

<210> 66
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<223> Xaa = any amino acid; or Xaa = any amino acid other than Leu; or Xaa = Phe, Trp, and Tyr; or selected from from any other natural or non-natural aromatic amino acid; or Xaa = Tyr

<221> VARIANT
<222> 1, 2, 3, 4, 5
<223> Xaa1 = Asn, Xaa2 = Ser, Xaa3 = Ser, Xaa4 = Asn, Xaa5 = Tyr; or Xaa1-Xaa5 is missing; or Xaa1-Xaa4 is missing; or Xaa1 -Xaa3 is missing; or Xaa1 and Xaa2 is missing; or Xaa1 is missing

<221> VARIANT
<222> 19, 20, 21
<223> Xaa 20 = Asp, Xaa21 = Phe or missing; or Xaa20 = Asn or Glu and Xaa21 is missing; or X19-Xaa21 is missing

<221> VARIANT
<222> (1)...(21)
<223> Xaa = Any Amino Acid

<400> 66
Xaa Xaa Xaa Xaa Xaa Cys Cys Glu Xaa Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr Xaa Xaa
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<210> 67
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<400> 67
Gln Ser Ser Asn Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 68
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<213> Artificial Sequence

<220>
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<400> 68
Asn Thr Ser Asn Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 69

<211> 19
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Asn Leu Ser Asn Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
 1               5                  10                  15
Gly Cys Tyr

<210> 70
<211> 19
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Gly Cys Tyr

<210> 71
<211> 19
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<220>
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<400> 71
Asn Ser Ser Gln Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
 1               5                  10                  15
Gly Cys Tyr

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 1               5                  10                  15
Cys Tyr

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<211> 19

<212> PRT
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Gln Ser Ser Gln Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr
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Gly Cys Tyr

<210> 74
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Ser Ser Gln Tyr Cys Cys Glu Tyr Cys Cys Asn Pro Ala Cys Thr Gly
 1               5                  10                  15
Cys Tyr

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Gly Cys Tyr

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 1               5                  10                  15
Gly Cys Tyr

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<400> 77
Asn Ser Ser Asn Tyr Cys Cys Glu Asn Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

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<400> 78
Asn Ser Ser Asn Tyr Cys Cys Glu Asp Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 79
<211> 19
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<400> 79
Asn Ser Ser Asn Tyr Cys Cys Glu Cys Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 80
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<400> 80
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1 5 10 15
Gly Cys Tyr

<210> 81
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1 5 10 15
Gly Cys Tyr

<210> 82
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<400> 82
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1 5 10 15
Gly Cys Tyr

<210> 83
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Asn Ser Ser Asn Tyr Cys Cys Glu His Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 84
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<400> 84
Asn Ser Ser Asn Tyr Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 85
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1 5 10 15
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<210> 87
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<400> 87
Asn Ser Ser Asn Tyr Cys Cys Glu Phe Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 88
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<400> 88
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1 5 10 15
Gly Cys Tyr

<210> 89
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Asn Ser Ser Asn Tyr Cys Cys Glu Ser Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 90
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Gly Cys Tyr

<210> 91
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 91
Asn Ser Ser Asn Tyr Cys Cys Glu Trp Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 92
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 92
Asn Ser Ser Asn Tyr Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Thr
1 5 10 15
Gly Cys Tyr

<210> 93
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 93
Cys Cys Glu Ala Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 94
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 94
Cys Cys Glu Arg Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 95
<211> 14
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<213> Artificial Sequence

<220>
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<400> 95
Cys Cys Glu Asn Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 96
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 96
Cys Cys Glu Asp Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 97
<211> 14
<212> PRT
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<220>
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<400> 97
Cys Cys Glu Cys Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 98
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 98
Cys Cys Glu Gln Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 99
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 99
Cys Cys Glu Glu Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 100
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 100
Cys Cys Glu Gly Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 101
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 101
Cys Cys Glu His Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 102
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 102
Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 103

<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 103
Cys Cys Glu Lys Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 104
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 104
Cys Cys Glu Met Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 105
<211> 14
<212> PRT
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<220>
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<400> 105
Cys Cys Glu Phe Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 106
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 106
Cys Cys Glu Pro Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
 1               5                  10

<210> 107
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 107
Cys Cys Glu Ser Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr

1 5 10

<210> 108
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 108
Cys Cys Glu Thr Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 109
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 109
Cys Cys Glu Trp Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 110
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 110
Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Thr Gly Cys Tyr
1 5 10

<210> 111
<211> 5
<212> PRT
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<220>
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<400> 111
Gln His Asn Pro Arg
1 5

<210> 112
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 112
Val Gln His Asn Pro Arg
1 5

<210> 113
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 113
Val Arg Gln His Asn Pro Arg
1 5

<210> 114
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 114
Val Arg Gly Gln His Asn Pro Arg
1 5

<210> 115
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 115
Val Arg Gly Pro Gln His Asn Pro Arg
1 5

<210> 116
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 116
Val Arg Gly Pro Arg Gln His Asn Pro Arg
1 5 10

<210> 117
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 117
Val Arg Gly Pro Arg Arg Gln His Asn Pro Arg
 1               5                  10

<210> 118
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 118
Arg Gln His Asn Pro Arg
 1               5

<210> 119
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<221> VARIANT
<222> 1, 2, 3, 4, 5, 8, 9, 12, 13, 14, 17, 19
<223> Xaa = any amino acid

<400> 119
Xaa Xaa Xaa Xaa Xaa Cys Cys Xaa Xaa Cys Cys Xaa Xaa Xaa Cys Xaa
 1               5                  10                  15
Xaa Cys Xaa Xaa Xaa
            20

<210> 120
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<221> VARIANT
<222> 1, 2, 3, 4, 5
<223> Xaa1 = Asn, Xaa2 = Ser, Xaa3 = Ser, Xaa4 = Asn,
      Xaa5 = Tyr or missing; or Xaa1- Xaa4 is missing
      and Xaa5 = Asn

<221> VARIANT
<222> 8
<223> Xaa = Glu or Asp

<221> VARIANT
<222> 9
<223> Xaa = Leu, Ile, Val, Trp, Tyr or Phe

<221> VARIANT
<222> 16
<223> Xaa = Thr, Ala, or Trp

<221> VARIANT
<222> 19
<223> Xaa = Trp, Tyr, Or Leu or is missing

<221> VARIANT
<222> 20, 21
<223> Xaa20 = Asp, Xaa21 = Phe

<400> 120
Xaa Xaa Xaa Xaa Xaa Cys Cys Xaa Xaa Cys Cys Asn Pro Ala Cys Xaa
1 5 10 15
Gly Cys Xaa Xaa Xaa
20

<210> 121
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 121
Asn Ser Ser Asn Tyr
1 5

<210> 122
<211> 30
<212> PRT
<213> Yersinia enterocolitica

<400> 122
Gln Ala Cys Asp Pro Pro Leu Pro Pro Ala Glu Val Ser Ser Asp Trp
1 5 10 15
Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
20 25 30

<210> 123
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 123
Lys Lys Lys Lys Lys Lys
1 5

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetically generated peptide

<400> 124
Asp Lys Lys Lys Lys Lys Lys
 1               5